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Title: Gamification as Complementary Capabilities - A Qualitative Study

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Abstract

Lately, gamification has been vastly implemented across different industries. The term has attracted many practitioners and researcher due to the wide variety of applications in health, education, employee engagement and customer engagement areas. Within organizational context, gamification has witnessed several implementations to increase employee satisfaction, stimulate innovation and even facilitate collaboration. However, the focus of these applications was merely to implement a gamified platform that acts as a short-term solution for immerging issues. Hence, from a theoretical perspective, these gamified solutions were mainly studied from an individual, short-term system interactions point of view, lacking an in-depth examination of long-term, strategic organisational impacts such as building capabilities. This paper studies gamification from a novel point of view as a strategic complementarity within organizations that can potentially help in building capabilities (e.g. learning, technology adoption, talent management and even dynamic capabilities). A preliminary qualitative study is conducted to explore how to utilise gamification as a strategic complementarity from a designer (gamification service-provider) point of view that can potentially affect the way practitioners and academics utilize gamification.

Track: Operations, Logistics and Supply Chain Management

Keywords: Gamification, Organisational Capabilities, Complementary Assets, Qualitative Study

Word count: 7060

1. Introduction

The concept of gamification has recently been booming, promoted as an innovative way of utilising and applying technologies across different fields including education, health and organisational development (Zichermann and Cunningham, 2011). Gamification is basically the technology assisted application of games design elements in non-game contexts (Hamari, 2013). The literature shows key potential effects of applying gamification within organisations including engagement, motivation, collaboration, knowledge sharing, learning and even stimulating innovation (Lucasse and Jansen, 2014; Ryan and Deci, 2000; Kapp, 2012). Gamification as such has been received with a sense of anticipation to promise a new generation of assets that might be employed to enhance organisational capabilities. The research in this area is still in its nascent stage, and particularly from a theoretical point of view is yet to be explored. Questions that beg for answer include: how gamification should be utilized from a strategic perspective within organisations? And how the effects from gamification should best be interpreted (and theoretically explained) to assist in best decision making for investment into its adoption?

Gamification, the technology enhanced form of games, develops what is known as social engagement loops that utilise psychological, emotional and social constructs to increase engagement and motivation (Zichermann and Cunningham, 2011). The existing literature on gamification however shows a rather limited perspective, typically merely from an application development stand point. This can reduce the understanding of the concept to a tool for achieving a short term organisational effect such as increasing employee engagement and stimulating collaboration or facilitating learning (Hamari et al., 2014; Robson et al., 2016; Werbach, 2014; Kapp, 2012). Consequently, aspects such as the developed enacted relationships and their respective outcomes may be missed in studying gamification. Since a fundamental motivation for introducing gamification is improving performance of the firm, resulting from improved use of resources and organisational assets, gamification can be expected to contribute to the development or improvement of organisational capabilities (Lucasse and Jansen, 2014).

This view justifies employing a capability perspective, from a Resource Based View (RBV), to provide an appropriate theoretical angle for understanding position and hence role and effects of gamification. Moreover, in line with the complementary asset theory (Teece et al., 1997), gamification fits better the specification of complementary capabilities or assets in organisations as proposed by Elsayed et al. (2018) as a strategic complementary conceptual model. This model explained how gamification can support or act as a dynamic capability within the firm, which carries the role to support strategic and dynamic development of required capabilities for sustained competitiveness of the organisation. This view modified the current approach of studying gamification as a tool, predominantly proposed in the literature, into a strategic catalyst for building capabilities.

The goal of this paper is to study this model and examine gamification as complementary capabilities or assets using a qualitative approach from a service provider (game designer) point of view. This choice provides an in-depth study from practitioners' points of view of their hand-on experience with gamification complementarity. The study explores gamification as the synthesis of play and technology application, which in combination takes a complementary asset role that leads to effective changes in human resource behaviour within the organisation and as a consequence, positive changes in the learning environment and social interaction will occur leading to improved processes, routines and ultimately organisational capabilities.

2. Research Background

The focus of this research is exploring Gamification as a complementary asset for building organisational capabilities. Existing literature has largely studied and presented gamification as a motivational affordance stimulating psychological and behavioural outcomes. Elsayed et al. (2018) conceptual model however contends that for understanding Gamification it should be explored in relationship to different organisational capabilities, which its game elements can potentially impact and help in building those capabilities by modifying user behaviour and creating a motivational, fun and engaging environment (See Figure 1).

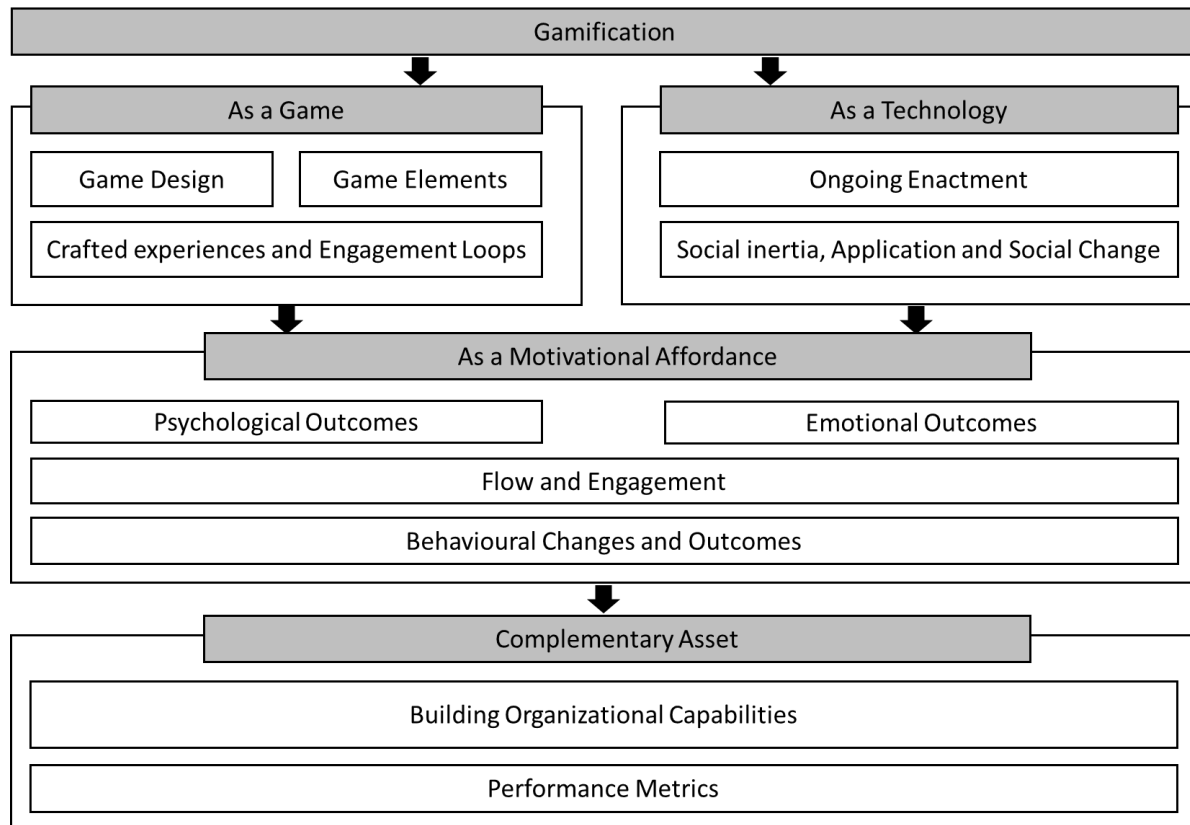


Figure 1. Conceptual model for building organisational capabilities using gamification as a complementary asset (Elsayed et al., 2018)

2.1. Gamification, Play and Game Elements

Gamification is defined as the usage of different game design elements within non-game contexts (Zichermann and Cunningham, 2011) for deriving certain behaviours. Gamification utilizes an important concept of playing, which can have a positive effect on individuals as their lives become more imaginative, creative and fun (Kolb, 2010). Basically, a game is a play that is defined by boundaries and rules to create a quantified outcome (Kapp, 2012).

Gamification is made up of multiple building blocks (based on Dignan (2011) framework) that share the purpose of creating an engaging gamified environment. Given these building blocks, the aim is not to implement them separately. Instead, an integrated engaging experience is the sole purpose of gamification that can utilize different gaming elements to serve a specific purpose (Zichermann and Cunningham, 2011). These elements are categorized into: game dynamics (such as rules and emotions), game mechanics (such as competition, rewards and challenges) and components (such as points, badges and leaderboards) (Werbach, 2014). An important aspect about these elements is that they should be adequately designed and crafted

to align with a specific business environment, and not only added as a fit for all structure for engagement and motivation (Hamari, 2013). Therefore, it is important to carefully understand the players and their competence level to be able to design an adequate gamification model that should provide a motivational challenge without causing frustration (Zichermann and Cunningham, 2011). This can lead to the ‘flow zone’ where players can find a balance between challenge, control and progression when highly engaged in an activity (Kapp, 2012).

2.2. Gamification and Motivational Design

Several frameworks have been identified in the literature that tried to utilize and adapt game and play design techniques into a gamification design process through persuasive technology tools (Werbach, 2014; Dignan, 2011). These technologies aimed to change individual behaviour and attitude using technologies (Fogg, 2003). Werbach (2014) extended Dignan’s (2011) model to incorporate intrinsic motivators that comprises three main elements: autonomy, competence and relatedness (elements of the self-determination theory) (Ryan, 2006; Ryan and Deci, 2000). These elements are considered a cornerstone for engagement (Bakker, 2011) unlike extrinsically rewarding motivations that have short-term productivity effects (Lilienfeld et al., 2010). Therefore, it is crucial for designers to understand different contexts to utilize these motivators. However, empirical research has been focusing on devising studies around measuring engagement and motivational impacts of gamification within organisations and lacked a deeper analysis beyond those psychological and emotional impacts, which are addressed in this study. More specifically, an understanding of organisational capability building impacts by studying gamification as a technology rather than a short-term application.

2.3. Gamification as a Technology

Robson et al. (2015) work was a leading research that explored a new lens for gamification as a technology instead of a tool or application. Robson et al. (2015) explain how gamification has been utilized to derive different business outcomes such as employees’ sales and increasing performance. They also show how the gamified system users can be from within the organisation, which is the case of driving employee engagement and satisfaction (called internal gamification) or even from outside such as engaging with customer or collaborating with external parties (called external gamification).

Similar to Orlikowski (2000) work, this research aims to identify and understand how gamification, as a technology not just a tool, can produce different types of enactments associated with users interacting with technology (in this case gamification). Orlikowski (2000) argued empirically that 3 main types of enactments can be produced, namely: Social inertia, application and social change. She defined the social inertia enactment as a preservation to current structures and processes. On the other hand, application and social change happen when the interaction with technologies result in new practices, norms, relations or even complete transformations. This point is crucial for the proposed research since the aim is to understand gamification’s impact on different organizational practices. An important point to highlight here is the fact that unlike off-the-shelf technologies or tools that are implemented within organisations, gamification is not the end product/technology by itself. Therefore, gamification should not be perceived as an enactment producing technology, but as a facilitating technology that would stimulate producing more application and social change enactments rather than stumbling upon social inertia when implementing a new technology within the organization.

In other words, gamification would help (as a capability) in increasing adoption and usage of new technologies within firms and not sit as a one-time end user application by itself.

2.4. Gamification Complementarity and Building Organisational Capabilities

This lens highlights the literature's lack of vision in exploring gamification as a complementary asset/capability. Complementary assets are defined as the capabilities and/or resources that help firms capitalize on the profits and outcomes associated with a technology, strategy or even an innovation (Teece, 1986). These complementary assets are required by organisations when developing certain products or entering new markets as a set of supporting assets to help commercialize these products (Helfat and Lieberman, 2002; Schoenecker and Copper, 1998). Barney (1991) explains how resources and capabilities needed for building complementary assets can vary from being human, organisational or physical resources. Several examples of complementary assets in the literature include R&D, production capabilities, marketing capabilities or even direct sales force (Swink and Nair, 2007).

RBV theories suggest that achieving sustained competitiveness is largely predicated on developing organisational capabilities that utilise and mobilise resources including human resources through motivating and engaging them. Some of these capabilities have already been mentioned as example in the prior section such as employee engagement, collaboration or innovation. However, a closer look at those capabilities and how gamification can positively help in building them as a complementary asset is required. These capabilities can be represented as a collection of abilities, skills and expertise owned by an organisation in terms of its individuals' collective abilities and competences (Ulrich and Smallwood, 2004). Therefore, the essence of gamification's complementarity may rest in the ability of an organization to leverage elements of play. The ability to innovate can be an example of such capabilities that usually arise from investments in several aspects such as rewarding, training, communicating and recruiting areas that are hugely tied in with human resource ones (Ulrich and Smallwood, 2004). Similarly, Maritan (2001) defines organisational capabilities as the capacity of a firm to utilize its tangible and intangible assets (including resources) to produce an output or improve current performance.

3. Aim and Objectives

Based on the researched literature and Elsayed et al. (2018) model, the aim of this study is to explore the potential of gamification to act as a complementarity helping in building organisational capabilities.

Research question: How can gamification, as a complementary asset, help in building organisational capabilities?

Elsayed's et al. (2018) model proposed gamification as a technology facilitator for social change to help in building organisational capabilities. To achieve this, the model suggested utilising the gamification design cycle through the right choice of game elements, aligning strategic business objectives through capability building metrics and devising the appropriate engagement loops by eliciting the appropriate psychological and emotional antecedents of human resources. This study explores this by targeting the following objectives:

1. Understand and explore the game design process required for gamification technologies to act as a complementarity.

2. Understand how game design process may trigger different psychological, behavioural and emotional factors that can be utilized to build organisational capabilities.
3. Explore potential capabilities that can be built and sustained by adopting gamification as a complementarity.

These objectives help in answering the research question and examining the model's main components by understanding how to design gamified technologies that have long-term strategic complementarity value (that is a means to an end) rather than short-term off-the-shelf app (that is considered an end goal in itself). The study also examines the emotional component of gamification and how it can be utilised in building capabilities. Finally, several example capabilities are also studied to explore the benefits of this complementarity.

4. Methods

As indicated earlier, gamification literature has been focusing on inferring user-behaviour using quantitative methods (Hamari et al., 2014) and evaluating short-term interaction using quantitative methods. Qualitative studies has been rare in this field, especially the ones aiming to understand the long-term strategic impact of gamification (Dong et al., 2012; Montola et al., 2009). An exploratory approach was adopted in order discover more ideas and get insights from practitioners about the potential strategic long-term complementarity of gamification (Miller & Salkind, 2002). The data collection method chosen was conducting one-to-one interviews to have an in-depth study of potential capability building processes (Bradley, 2010). A semi-structured interview was designed in order to gain insights from different gamification service providers (practitioners) about their perception of gamification strategic complementarity and the reasons behind it (Miles & Huberman, 1994).

4.1. Individual in-depth Interviews

Individual interviews were conducted to collect data from practitioners (gamification service providers and designers). Practitioners were chosen as the main target sample for this preliminary study to act as the basis of exploring gamification through a “design for complementarity” lens. This can then be complemented by another future study exploring the users' perspective to capture and integrate the entire emotional and behavioural viewpoints from both ends of the spectrum. One-on-one interviews were chosen to get more in-depth insights that is informed by perspective gained while designing and implementing the gamified platforms. Considering the feasibility of interviewing practitioners who have worked on several internal gamified projects (for employees) closely with clients from different industries with capability-building goals. Then, convenient sampling was used to recruit participants by inviting practitioners who fit the criteria to participate. A semi-structured interview schedule was used. All interviews were audio recorded and transcribed.

A purposeful convenience sampling process was selected in order to get 10 representatives who developed internal gamified platform that targets employees within organisations (Miller & Salkind, 2002). Constraints such as time and availability limited the sample size to only 10 participants, hence convenience sampling. Interviews were recorded and transcribed by hand. Thematic analysis based on pattern coding is used in order to identify main themes and reasons behind using gamification as a strategic complementarity (Miles & Huberman, 1994). A three stage coding technique was used to generate inductive themes that were verified using

triangulation (10 different participants) and participant feedback. Priori themes were chosen based on Elsayed et al. (2018) conceptual model to reflect the main objectives of the study within the interview questions as shown in Table 1. A full list of the interview questions is shown in Appendix A.

Table 1. Mapping interview questions to priori themes based on Elsayed et al. (2018) model and research objectives

Priori themes	Interview Questions	Research Objective
I. Gamification as a game		Research objective 1
Game design	Questions 1 & 2	
Game elements	Question 3	
Playful experiences & Engagement loops	Questions 3 & 4	
II. Gamification technologies		Research objective 2
Ongoing enactments and social change	Questions 4, 5 & 6	
III. Motivational affordances		Research objective 3
Psychological and emotional outcomes	Question 5	
Behavioural outcomes	Question 6	
IV. Complementarity		Research objective 3
Building organisational capabilities	Questions 7,8,9,10 & 11	
Performance metrics & complementarity	Questions 12 & 13	

4.2. Analysis

The interview questions were piloted with two professors and one representative from a gamification service-providing company. Inductive coding (Miles and Huberman, 1994) was then utilized by examining the transcribed data as part of the qualitative data thematic analysis (see Figure 2). Open coding was first generated based on participants' responses, then axial and selective codes based on the identified patterns and recurring themes were generated. As part of ensuring the research's validity, low-inference descriptors were used by using direct quotations from participants. Participant feedback was also maintained to check the consistency and validity of the interviewer's interpretations of all the responses. Transcribed responses were sent by email to participants to provide any feedback or amendments to their answers.

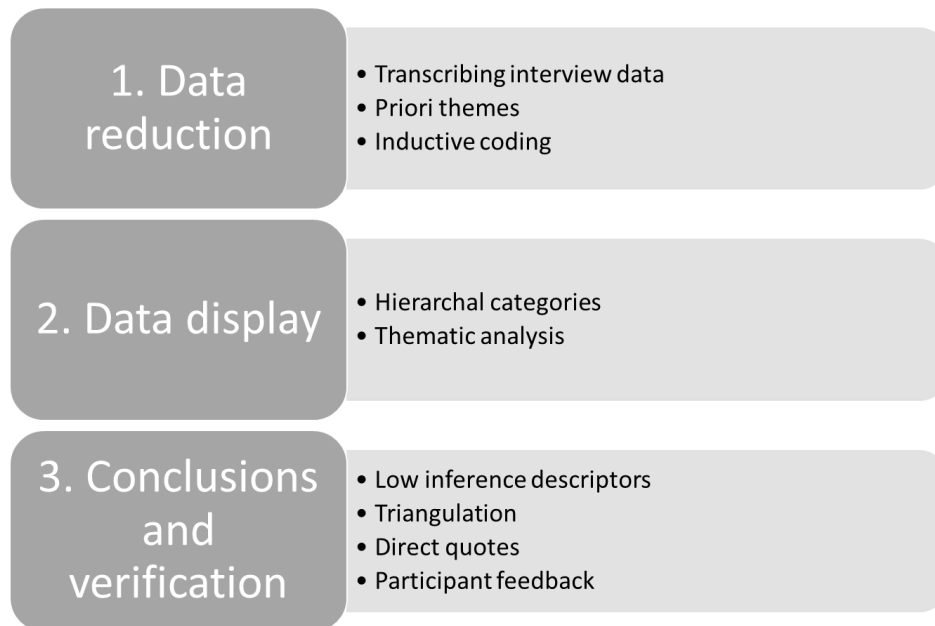


Figure 2: Qualitative data analysis procedure based on Miles and Huberman's (1994) framework

Interviews participants

Ten practitioners were interviewed in a one-on-one 1 hour online interviews. Participation was voluntarily and the materials from participates was treated confidentially and anonymously. Participants also had the option to review and critique the final outcomes. Although the sample size is relatively small, but saturation was reached for all themes after the 7th interview. This is mainly due to the focused study scope of interviewing only practitioners who has been involved in developing internal gamified platforms within organisations with long-term capability building goals as success metrics.

The selected sample had 6 male and 4 female participants. To gain in-depth insights from the sample, different perspectives about the gamified process was ensured by selecting participants with different and diverse roles. From CEO, sales managers, consultants to designers of gamified systems that target organisational training, learning, employee development, employee engagement and stimulating innovation and collaboration, the sample reflected a wide array of perspectives and involvement points for building gamified systems. The average age was 40 and the average years of experience within the gamification industry were 8 years (acceptable for a recent industry).

5. Results

Since the literature have shown the potential benefits and feasibility of utilising gamification as a complementary, practitioners responses provided valuable insights of the detailed processes and considerations required to fully achieve the complementarity aspect of gamification for building organisational capabilities. The main themes were identified using the thematic data analysis process recommended by Braun and Clarke (2006). The initial codes in the data were identified by highlighting recurring ideas that were relevant to the study's objectives. Next, different codes were grouped into potential themes by triangulating across and within participants. Finally, themes were reviewed and refined to determine if any should be discarded or combined based on: the coherency and meaningfulness so the theme, the

identifiable and distinguishable differences between themes and finally, the generated themes were developed based on the consensus of all participants.

5.1. Gamification from the practitioners' point of view

Participants gave valuable insights on their take on gamification from a practical and a theoretical view point when they were asked to share their definitions and values of gamification as an introductory discussion item. Some of their views aligned with the published literature and other views expanded on the current literature by providing practical perspectives, especially regarding the long-term capability value of gamification beyond the typical engagement outcomes. The following are the main points concluded from the practitioners' point of view:

1. Agreed on defining gamification as “Game mechanics that are utilised within non-game contexts”.
2. Differentiated between implicit and explicit gamification based on the level of visibility and interactivity of the used gam elements.
3. Explained that the real value of gamification lies in the long-term strategic complementarity potential and the motivational affordances abilities (technology with emotional appeal).

5.1.1. Implicit vs Explicit Gamification

The majority of participants agreed on the abstract definition of gamification as the “*game mechanics that is utilized within non-game contexts*”. This consensus was expected since it aligns with the widely agreed upon definition and understanding of gamification by academics and practitioners. This was also the same definition introduced by Zichermann & Cunningham (2011) and then used by many researchers and practitioners since then (Kapp, 2012; Zichermann & Linder, 2013; Hamari et al., 2014; Werbach, 2014; Robson et al., 2016). An interesting addition to the literature regarding the basic definition was classifying gamification into implicit and explicit gamification based on the level of visibility of integrating game like components.

Participant 2: “*Explicit is something that is about making the game elements very visible and so therefore explicit gamification may even have games like real game designs as a part of it. Then the other form is that users only gain elements of game design and so you can see very easily what I call implicit gamification. I think today a lot of implicit gamification and psychological techniques like nudging let's say have certain overlaps, so if you nudge people in certain directions during when they are doing such actions then one could call that implicit gamification as well.*”

Participants agreed that this should rely on the context of applying gamification, the gamified content, how visually appealing should it look vs providing a meaningful objective, the users typology and demographics who are using the game and how to attract them without distracting them or make it too “*gimmicky*”. This again complements Hamari's (2014) argument of the importance of considering players demographic and the work environment while designing gamified platform to ensure the right fit and “*flow*” are achieved.

5.1.2. Long-term Value of Gamification

The emotional element of gamification was clearly observed and predominant when participants were elaborating the value of the experiences enacted by gamification. Key terms

were identified like “*engaging people*”, “*get motivation*” and “*gain interest*” to describe gamification experiences that were then elicited in the second main theme of gamification values. This emotional aspect clearly differentiated between traditional technology platforms or user interface and gamification by highlighting the human-centric emotional aspect of gamification.

An interesting point that was raised is the ability of gamification to “*engage people beyond their educational or social level*” as the game rules can potentially overpower social or cultural rules, creating an engaging environment and experience for different users that would even go beyond their demographic characteristics. This was also clear in the literature as Zichermann & Cunningham (2011) argued how engagement loops can be constructed regardless of cultural differences by creating immersive experiences that tap into basic human needs such as autonomy, competence and relatedness and this can on itself positively reinforce social engagement loops.

One core concept was also observed during the analysis of participant’s definition of gamification and the complementarity value perceived. Participants mentioned some of the strategic, long term, organizational wide capability building benefits of gamification while discussing the main value they have witnessed of using different gamified solutions. Some human resource capabilities were mentioned such as “*increase performance*”, “*complete tasks*” and “*learning new skills*”. Not only this, but companywide processes were also mentioned such as “*tracking performance*” and “*engaging stakeholders*”, which highlights the complementarity features of gamification as proposed by this research to be analysed in more capability building themes in the upcoming sub-sections.

5.2. Gamification Design for Complementarity

Participants agreed on several design principles some of which bridge certain gaps in the literature regarding how gamification can be designed and utilised within organisations to achieve organisational-wide strategic goals instead of being an end goal in itself. Participants raised three main points in regards to designing for complementarity:

1. Human-centric design and the importance of factoring in human emotions to devise long-term engaging experiences.
2. Goal-oriented design that considers organizational capabilities and design success metrics around wider strategic goals.
3. Game elements choice considerations during designing for complementarity to factor in players, their preferences, emotions/core drives, organizational context and strategic goals.

5.2.1. Human-centric Design

Participants reached a consensus regarding how gamification design should be more “*human-centric*” than “*functional-centric*” since human motivations is one of the main considerations of designing those systems in the first place.

Participant 4: “*This is a distinction I would like to make here and this is the difference actually between a human focused design and a function focused design. What I mean is that usually a function focused design is a function focused system so it just says, like you have buttons and you have staff and you just click and everything works fine. Right so everything works fine, and everything is functional and it is ok however when we think about gamification we always think about human motivation.*”

The human-centric view discussed by participants highlights how gamification inherently factor in those enactments within the design phase by considering human motivation and elicited emotions during interaction, which can potentially help in bypassing the social inertia stage discussed by Orlikowski's (2000) and reaching a social change stage due to the resultant interaction and engagement produced from using the gamified systems.

Participant 7: *“But always coming from the understanding of the design of the user and understanding what they thinking and feeling and how that relates to what they are trying to achieve in the experience and that could be an event or a game something physical, it doesn't really matter because all of that is just how you help people to interact with your narrative, basically”.*

Participants emphasized on this emotional element and how it plays an important role in differentiating gamification design from traditional software or systems design model. Crafting *“artistic game experiences”* that would consider the *“motivation behind each element”* and consider *“human feelings”* supported this argument and aligned gamification technologies with what Orlikowski (2000) defined as social change that can be achieved whenever users get invested in a new technology, in the case of gamification, due to the emotional attachments resulting from the *“human-centric”* focused design. Practitioners also focused on the emotional/psychological side by highlighting the importance of providing *“autonomy, engagement loops and proper reward mechanics”* based on different user preferences, which directly aligns with self-determination theory by Ryan and Deci (2000) and the user typology reflected in the context of the business environment and player preferences (Hamari, 2013).

5.2.2. Iterative Goal-oriented Design Approach

When participants were asked about the design process and how to design for complementarity, participants agreed on three main distinctive stages of *“ideation”*, *“implementation”* and *“testing”*. The stages are similar to an engineering design process, except for the emotional aspects that was heavily interrelated to different elements in the three stages. This was also evident by cross-analysing the results with the characteristics of the game design process and the important theme that emerged of the *“human-centric design”* aspect.

However, the design process as described by participants' was not strictly an engineering waterfall one, but more of an agile with *“rapid prototyping”* and *“incremental”* design focus based on repeated and iterative testing (Johnson, 2006). However, the process was not game-based or human-centric solely, but also goal-oriented. This was evident from the data as although human emotions were considered through the whole design process and while selecting each game element, the whole objective was tied to an organizational goal that needed to be fulfilled and hence the value of gamification complementarity. Not only that, but participants also mentioned how the *“long-term objective”* of the gamified platform itself should shape and dictate the design process. This again reinforces the context-dependent and bespoke nature of gamification and not a typical one size fits all application or technology that would facilitate the capability building features of gamification if properly tied with long-term strategic goals.

Participant 3: *“Basically I start out by getting people to really focus on the problem they want to solve and agree on how they would know if they solve a problem and then figure out game design approaches that they can use to solve it. So I don't typically pick out a game design until I figure out what the problem is first, because if you pick*

a game team or a game design first it might not be the right fit for the problem you want to solve.”

Participants agreed on the importance of clearly identifying the “*purpose and goal of the system*” to harness the complementarity aspects of gamification. They mentioned how designing for long-term objectives starts from the problem definition stage and shapes up the whole system and decides if gamification can actually help in fulfilling those objectives or not. “*We sit with clients and we put a list of business metrics. Those are the important business outcomes that the company wants to have in the end as you can imagine.*”

5.2.3. Game Elements and Emotional Drives

Participants explained how the human-centric approach and the goal-oriented approach both contribute in the choice of game elements while designing a gamified system. They mentioned several game elements that they use while designing their gamified platforms that aligns with Werbach’s (2014) dynamics, mechanics and components model (See Table 2 for a detailed list of the elements utilised by participants). However, the same implicit/explicit categorization mentioned before was present here as well. Practitioners explained how implicit and explicit gamification can be achieved using the right set of elements that should serve the design purpose as well as the “*demographic and user preference*”.

Table 2: Summary of game elements used by participants

Name	Element Type	Visibility	Frequency
Progress meter	Component	implicit	3
Leaderboard	Component	explicit	5
Badge	Component	explicit	4
Points/Score	Component	explicit	6
Levels	Component	implicit	2
Immediate and meaningful feedback	Mechanic	implicit	5
Rules and constraints	Dynamic	implicit	2
Competitions and quests	Mechanic	implicit	2
Goals and missions	Mechanic	implicit	2
Social rating and feedback	Mechanic	implicit	3

Although the table shows the points (an explicit gamified element) to be the mostly used one among practitioners, yet most of the elements used are surprisingly implicit ones. This again reflects the point highlighted by practitioners about avoiding the overly “*gimmicky*” feeling of the platforms and recent trend of focusing more on meaningful experiences and social engagement loops than flashy or cartoony dashboards (Kapp, 2012).

An interesting point that was raised by participants was explaining how the “*human focused design*” aspects mentioned earlier dictates the choice of elements. Hence, bridging the theoretical gap between the two by introducing two new terms, namely: “*white hat gamification*” and “*black hat gamification*”. Participants argued that white hat gamification is basically choosing the right game elements to tap into the intrinsic motivational aspects (theorised by Ryan (2006)). They explained that this can be achieved by tackling intrinsic “*core drives*” such as “*epic meaning*”, “*accomplishment*” and “*empowerment*” and using the right tools (game elements) to achieve that like recognising achievements (e.g. badges) across an organisation or publicizing accomplishments (e.g. leaderboards). On the other hand, black hat gamification was described as the negative reinforcement loops that can engage users by

tapping into their fear of loss and avoidance using core drives such as “scarcity” and “unpredictability” while implementing different game elements like collecting points and losing virtual tokens.

Participant 4: *“Core drive two is called development and accomplishment, it is usually what we would consider is the internal drive of people of making progress, you are studying as you hope to get more knowledge, you are working harder because you know maybe tomorrow you will get an advance, you will improve and get something better. An example here is the linked in progress bar”.*

5.3. Psychological, Emotional and Behavioral Essence of Gamification

Practitioners’ discussions supported the literature regarding the capability of several gamified elements in changing and altering user behaviours by eliciting certain emotions and impacting different psychological patterns. The concepts of creating engagement loops through intrinsic motivation developed by Zichermann and Cunningham (2011) was emphasized and complemented by participants as well as reaching “flow zones” (Kapp, 2012) to create sustainable long-term engagement instead on focusing on short term extrinsic rewarding schemes.

Participant 6: *“So if you engage someone in something and they really find it valuable and they get that internal buzz of learning or achieving something then they are more likely to engage with the content going forward.”*

Participants, however, reached a consensus delineating this psychological/behavioural process. Even though some of them used slightly different terminologies (e.g. core drives/emotional antecedents), they all agreed on the following high level process flow:

1. The choice of game elements is dictated by the core drives required (such as accomplishment).
2. Core drives integration in game design evoke different psychological outcomes (such as flow).
3. Those outcomes elicit different emotions (such as immersion, excitement and engagement).
4. These emotions can help in changing user behaviour by properly crafting them around gamified experiences.

Participants explained how the discussed human-centric design, accompanied with goal-oriented game design can “artistically” craft a gamified experience that would take users in a journey of psychological, emotional and behavioural changes. Several behavioural outcomes were identified by participants such as “learning”, “increased productivity” and “personal development”

Participant 7: *“Sometimes you want them to understand something more about it, so learning is also very much a behavioural outcome that can come from it you want people to understand more about pensions so that you help design a way of explaining that to them in a way that they will feel more connected to you know”*

5.4. Complementarity for Building Organisational Capabilities

The previous 3 sections showed how practitioners design their gamified platforms for complementarity. First, they demonstrated how they design for capabilities by adopting a “goal-oriented” design approach. To embed this approach in the game design cycle they complement it with the “human-centric” design aspect to devise the emotional capacity that

can lead to long-term sustainable adoption and social change through engagement loops. Practitioners agreed that both the “*goal-oriented*” and the “*human-centric*” design aspects dictates the choice of game elements, that then shape up the gamified platform experience whether they are explicitly and implicitly present. When participants were asked about their experiences and the capability building impacts they have seen, their views can be summarised as follows:

1. Gamification can act as a complementarity through building organisational capabilities using the right design approach.
2. Shared case studies demonstrating practitioners’ gamified platforms impacting and building different capabilities.
3. Difficulty of providing direct company-wide performance metrics, but the availability of proxy measures.
4. The usage of gamified system provide valuable meta-data and by-products (such as usage, adoption and learning trends) that can help in reflecting the human capital performance levels within an organisation.

5.4.1. Capability Building Potential

All participants agreed on the ability of gamified platforms in building different organisational capabilities. They attributed this again to the design considerations mentioned in the previous sections as key points in order to design for complementarity and hence building capabilities.

Participant 7: *“but I would say, can you design experiences that have impacts on these organisational capabilities – absolutely, it just comes down to understanding what it is you are trying to achieve, why you are trying to achieve it and not getting stuck in either over gamifying something or over featurising, so really understanding how your employees are working.”*

The capabilities discussed by practitioners could be categorized into two main threads: individual development capabilities and organisation-wide capabilities. First, individual employee capabilities mentioned as outcomes of gamified platform ranged from “*developing personal skills*”, “*learning*”, “*participation*”, “*quality of work*” to “*team work*”. Aggregating these aspects were observed by participants to impact overall organisational capabilities such as “*collaboration*” and “*knowledge*”. Stemming from the “*goal-oriented*” design methodology specified by participants, other organisational wide capabilities such as “*breaking silos*”, “*innovation*” and “*nurturing human capital*” were all presented as solutions that were achieved due to being built-in in the design process from the beginning by setting them as goals for the gamified platform.

Participant 2: *“Again this is a problem that occurs in many organisations what we call organisation silos and I think these silos are easily broken down, at least I think that you can build bridges through games. So that is at least one very strong organisational perspective.”*

Table 3 shows a frequency distribution of the number of participants/practitioners who worked on gamified platform and was able target an organisational capability through the previously detailed design techniques.

Table 3: Frequency distribution of organisational capabilities that were directly impacted by gamified systems designed by participants

Capability Type	Capability	Frequency
Individual development capabilities	Skills development	4
	Learning	5
	Participation	3
	Quality	7
	Teamwork	7
	Adoption	3
Organisation-wide capabilities	Collaboration	7
	Knowledge	8
	Innovation	7
	Breaking silos	3
	Retention	4

5.4.2. Measuring Impacts and Performance Metrics

Although most participants agreed on the difficulty of adequately measuring certain company-wide performance metrics resulting from building those capabilities and accurately linking them, yet some were able to witness and target some proxy measures.

Participant 5: *“Cost reduction, greater reach and also geographically we deal with a lot of companies that have a dispersed workforce and it is very costly to transport workers to a central position or send trainers out to multiple positions and so we are able to delivery training and we are very efficient and do it in a cost effective way. If you then couple that with increased retention versus formal training where you can lose up to 90% of the knowledge that you learn in a classroom setting, that in itself offers a single instance of a return on investment, coupled with the savings as well.”*

One of the metrics that participants mentioned was usage and adoption rates that can be measured against the social inertia, application and social change levels identified by Orlikowski (2000) for the technology being gamified in general and hence project the benefits/saving of the essence of the tool (e.g. learning outcomes from training, or savings from streamlining and/or digitising the process).

Participant 7: *“How many people have improved a certain skill? Well if there is no set way to measure that certain skill being put into place it is hard to see exactly what the impact was or wasn’t. But there is usually some sort of performance metrics, so in customer service you can see if after this, you start using a tool that helps employees in a certain way so if the time it takes to answer a certain issue goes down that it clear. You may not know exactly what changes have happened inside the employee but you see it did and it caused something in a constructive manner to help lead you towards the results that you wanted”.*

An interesting addition mentioned by participants was the valuable meta-data and data those gamified systems can provide. Insights such as employees’ strengths/weaknesses, learning curve, knowledge capacity, performance and skills level can all be extracted, aggregated and tracked from these gamified systems, which then can help tin making more strategic and informed decisions.

Participant 5: *“Particularly collaboration as we can highlight strengths and weaknesses, so we can lead our stakeholders to make informed decisions in the future. Whether that is around further development that maybe required or that there is an*

area that is particularly strong in, for example a sales business they can focus on those products as they know that there is a strong appetite and knowledge retention or knowledge base or materials.”

Some participants even went further to propose that the data gathered through gamification processes can reflect the human capital performance and engagement levels within an organisation that can be aggregated to give a high-level view of how the company is performing.

Participant 5: *“And there are others that absolutely pin the future success of their organisation on gamification as it identifies the success of each individual group, team, region etc.”*

5.4.3. Gamification Complementarity

By utilising these design processes, choice of game elements and crafting proper psychological/emotional/behavioural responses, participants argued that long-term engagement outcomes would be expected rather than short term ones and provided some supporting evidence for these results.

Participant 1: *“we have got some basics, so in all apps there is a bit of drop off initially and retain the core users which is about 60% and (average goes up and down)we are happy with that, because it is usually 20% people stay on and use in on a weekly basis.”*

Participants explained that the delivery and usage itself maybe short-term, but long-term impacts can still be in place. This again supports the proposition of gamification complementarity as it can be used as a catalyst to derive long term impacts, even if the usage or delivery was done in a relatively short time span.

Participant 5: *“They are both actually because you have different instances where it may be a very short term initiative but the gamification will promote high performance. In the longer term where the user buys into a longer term strategy they are looking at their own performance grow over time so as they unlock the badges and achieve the points, as they can see their own performance grow, that gives them confidence in their own ability. In some instances we may have it that we are continually providing the training, in other organisations we may have one module that moves around the business. So in some respects that is the short term delivery but if they are a stakeholder they are still able to manage the performance and cross reference the performance of the various groups”*

Nevertheless, participants explained the requirements and constraints for adopting gamification as a complementarity. Things like the “*size of the company*”, the availability of “*resources*”, the capacity of “*outsourcing*” and the “*actual need for gamification*” all came as dictating elements to measure the readiness of a company to embed gamification as a complementarity.

Participant 3: *“I think that again depends on all the context right so is gamification going to solve the issues that they face, has it been successful in the past for them is it easy for them to implement within their organisation – so these are just a number of things they need to look at. There are some companies that could really, really, really use gamification and some that have certain profitism in place where it is not as necessary as others so I think, as we keep saying, it depends on the context. Right!”*

However participants agreed that for gamification to have these long-term capability building effects and act as a complementarity, the philosophy itself should be strategically embedded

within organisations and not perceived as the end goal in itself, rather as a means to a strategic goal to fully capitalize on the complementarity aspect.

Participant 4: *“Gamification cannot just be an icing on a cake, and we have quite a lot of clients that come and say we already have a solution but can we add gamification?”*

As participants discussed throughout the interview, this strategic view can be achieved by devising the proposed design techniques from an end-to-end perspective as follows:

1. Use human-centric design that acknowledges emotions and targets social change.
2. Utilise gamification as a complementarity using a goal-oriented design approach to build measurable capabilities rather than targeting gamification as the end goal.
3. Choose the appropriate game elements and level of visibility (implicit vs explicit) based on the organizational context, goals, user/player typology and desired emotional antecedents through core drives.
4. Craft the gamified experience around the desired company-wide or individual targeted capabilities with direct or proxy measurements of success.
5. Assess the readiness and the need of a company of utilizing gamification as a complementarity prior to strategically embedding it.

Participant 1: *“We need it to be part of everyday strategically and it is not something that they do differently in each organization not like anew initiative and then throw it and do something else. It needs to be HR and businesses get on board and say we should integrate more individual development plans rather than tell them what we want every time.”*

6. Discussion and Conclusion

In the previous discussions, practitioners explained how and why gamification can be used to create long-term behavioural changes within organisations. They enriched their contributions by explaining the design process that they believe should be *human-centric* and *goal oriented* in order to achieve the desired complementarity outcomes. They also discussed the choice of game elements, indicating the relevancy and adequacy of using those elements based on the desired emotional, psychological and behavioural outcomes by going through the human basic *core drives* and crafting a system that integrates and address these requirements in an artistic and engaging experience that is relevant to the users, context and goals.

Similar to video game design, gamification has a complicated and iterative design process that requires defining goals and objectives, understanding users (or players), designing the corresponding user journey that immerse players in engaging loops using the right gamification tools and elements (Werbach, 2014). Within an organizational context, practitioners demonstrated how this complex and iterative process could be aligned with strategic objectives to achieve/enhance certain performance metrics through building the required capabilities.

By combining both views of gamification from a play perspective and a technology perspective, gamified platforms have been shown to play an important role in creating engaging and immersive experiences that positively influences players (employees within organizations) and motivate behavioural changes through the right utilisation and integration of the emotional *core drives* of the users. Varying from stimulating collaboration, innovation and even increasing performance, different gamification elements (through variable dynamics, mechanics and components) act as motivational affordances to induce positive psychological outcomes such as engagement and motivation. Gamification utilizes the power of play by

tapping into basic intrinsic motivation through providing autonomy, competence and relatedness through various tools and elements to achieve these fun experiences.

However, this study took the current research on gamification further by explaining how these psychological, emotional and behavioural outcomes can affect various organizational capabilities and hence, the value of understanding gamification from a strategic perspective. By understanding the behavioural (change) aspects and their effect on building different capabilities witnessed by practitioners, this study proposes gamification as a complementarity that should be addressed from a strategic level and not as an off the shelf (short-term) application that is only implemented to address emergent issues. Interview participants detailed several examples of how gamification has been implemented as an application to serve a specific and bespoke goal such as facilitating training, creating a community of practice or even innovation catalyst.

As a complementary asset, gamification has the potential to help strategically in building different organizational capabilities. This view requires changing the perception (for practitioners and academics) about gamification from an end product or even a technology to a strategic practice/asset that can be used in building capabilities (even dynamic ones) on a daily basis. Utilizing the gamification *human-centric* design cycle and aligning business objectives through performance metrics with a *goal-oriented design* is one way of achieving this. By delineating metrics such as efficiency, effectiveness, quality and flexibility as gamified objectives, employees/players can be motivated through iteratively designed engagement loops and game components to positively impact their performance levels, quality levels and productivity. By embedding these tools in the whole employee journey, an incentivised and engaging experience can be created that would positively change routine jobs through psychological influences that would then help in building several capabilities.

This complements the technology-in-practice perspective since it helps in understanding how organizations can use gamification as a facilitator to move the induced enactments from social inertia to social change ones. Instead of using gamification as the end goal technology, gamification can potentially be used as the catalyst that help in increasing adoption and usability of newly implemented technologies by harnessing the power of play that can create psychological and behavioural outcomes impacting the usage and adoption rates of such technologies.

One of the main limitations of this study is the small sample size of 10 participants. Therefore, a bigger (and more diverse) sample is advised for further studies to critically explore more in-depth insights from practitioners in addition to studying the other perspective of users and the engagement experiences they encountered. Although saturation was achieved, yet a longitudinal case study that complements this study would be valuable. Different design techniques and approaches can be utilised and devised in this longitudinal case study to explore the complementarity process more rigorously. Company-wide capability metrics should be appropriately chosen and tested to explore the impacts of different gamification elements on the strategic process embedment. Hence, best practices should be recommended as an outcome of this future study beside verifying the complementarity process concluded from the study in hand.

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Appendix A

INTERVIEW QUESTIONS

GAMIFICATION EXPERTS & SERVICE PROVIDERS

PARTICIPANT DEMOGRAPHICS

Name	
Title	
Position	
Organization	
Industry/Sector	
Gender	
Age	
Years of Experience	

Section 1: Gamification as a Game

This item relates to gamification as a platform/solution and the elements of play including game dynamics, mechanics and components that are implemented.

1. How would you define gamification [from your own point of view] and the value in gamification (in your product development and for your market/customers)?
2. Please describe the existing game design process you apply, and how are clients engaged in this process?

3. Can you provide some examples of the main/different game design elements utilized by your organization? [Interviewer can give explanatory examples such as badges, points, leaderboards...etc.]
4. How do you choose these elements (on what basis)? Are there any technology affordances for different objectives/user tasks?

Section 2: Motivational Affordances

This item relates to gamification from an engagement perspective and how it can result in different psychological and behavioral outcomes.

5. Do you believe specific psychological outcomes can be derived from the use of gamification solutions (e.g. motivation, immersion, excitement...etc.)? *Probing: what are they and how do they work in practice? Examples?*
6. Do you believe specific behavioral outcomes can be derived from the use of gamification solutions (e.g. participation, adoption, learning, productivity...etc.)? *Probing: what are they and how do they work in practice? Examples?*

Section 3: Organizational Capabilities

This item relates to the potential impact of gamification in building organizational capabilities.

7. Do you believe gamified solutions can have impacts on building your clients' organizational capabilities (i.e. innovation, collaboration, knowledge, talent...etc.)? *Probing: How?*
8. Based on the previous question, were these impacts planned or are they only implications which may or may not take place (after effects)?
9. Do you find a relation between gamification outcomes (psychological or behavioral) and potential build up or improvement of clients' capabilities? *Probing: Examples?*
10. From a design/plan or experience of observing implications, do you find gamification to have any impact on any of the following organizational capabilities? *Probing: How?*
 - i. Talent (talent acquisition, retention, engagement and management)
 - ii. Collaboration (within and across teams/departments or even exogenous collaborative efforts)
 - iii. Innovation (exploratory or exploitative innovation)
 - iv. Knowledge and learning (knowledge dissemination, absorptive capacity)
 - v. Customer relationship management (engagement, adoption, need-satisfaction)
 - vi. Agility (flexibility and speed of responsiveness)
 - vii. Dynamicity (sensing, seizing and integrating opportunities)
 - viii. Ambidexterity (balancing exploitation and explorations practices)
11. How about the impact of gamification on any of the following performance metrics:
 - i. Cost (of production)
 - ii. Efficiency (of tasks)
 - iii. Quality (of outputs)
 - iv. Speed (of delivery)
 - v. Other

Section 4: Gamification as a Complementary Asset

This item relates to the proposed strategic view/integration of gamification as a complementary asset.

12. Were you able to witness/measure any short-term or long-term impacts of gamification as a solution or platform? *Probing: Examples?*

13. To what extent can gamification strategically integrate within organizations as a complementary asset? *Probing: How? What role?*